

REMARKS

Claims 1-6 and 11-18 are presently pending in the application. Claims 1-10 are rejected. Claims 7-10 have been cancelled. Claims 1 and 3 have been amended. New Claims 11-18 have been added for substantive examination.

Reconsideration of the objections and rejections set forth in the aforementioned Office Action is respectfully requested in view of the following remarks. The basis for the amendments can be found throughout the Specification, Claims and Drawings as originally filed.

SPECIFICATION

The specification stands objected to for certain informalities.

The Applicant provides an Abstract on a separate sheet as requested by the Examiner. Accordingly, the Applicant respectfully requests withdrawal of the objection to the specification.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 3, 7 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Marando (US 5,816,089).

Regarding claims 1 and 3, the Applicant has amended claim 1 to call for positioning a contact surface of a wall-thinning element offset from the die surface, expanding the blank by introducing pressurized fluid into the blank to force the blank wall against the die surface and the offset contact surface to form the hydroformed member and reducing a wall thickness of the blank during the expanding step to form a removable wall section, in combination with the other elements of claim 1. The Applicant respectfully submits that Marando does not disclose a method of

manufacturing a hydroformed member as defined by currently amended claim 1. On the contrary, Marando discloses positioning first end 52 of punch 50 on a plane coincident with a wall of cavity 26. Next, internal pressure is provided to workpiece 28 until the workpiece is expanded in an outward direction to conform with the size and shape of die cavity 26. It should be noted that no wall reduction processes have yet occurred in Marando. In particular, at Col. 6, lines 40-43, Marando states that when the workpiece 28 has fully expanded into the die cavity 26, the hole-forming portion of the process may be subsequently performed as shown in Figure 3.

Marando goes on to state that punch 50 is advanced to a position where workpiece 28 is only partially cut or perforated. Punch 50 is next retracted to a position where first end 52 does not contact workpiece 28. The internal pressure within workpiece 28 forces the partially cut area 28 outward resulting in a slug of material 60 being formed. Accordingly, the Applicant respectfully submits that Marando discloses an alternate method of manufacturing a hydroformed member but the process disclosed does not include each and every element of claim 1. Accordingly, the Applicant respectfully requests withdrawal of the § 102 rejections to claims 1 and 3.

Claims 7 and 10 have been cancelled. As such, the rejections to these claims are now moot.

REJECTION UNDER 35 U.S.C. § 103

Claims 2, 4-6, 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Marando (US 5,816,089).

It is unclear whether claim 3 is rejected under § 103(a) or not. If so, the Applicant respectfully relies on the amendments and arguments relating to claim 1 to overcome the rejection to claim 3.

Regarding claim 4, the Applicant respectfully submits that it would not be obvious to one skilled in the art as a matter of obvious design choice to move the hydroformed member out of the die assembly prior to the step of removing the removable wall section. On the contrary, the heart of the invention of Marando goes to an in-die hole piercing and slug ejection system within a hydroforming apparatus. Moveable punch 50 and dual fluid passageways are formed to provide a hydroforming operation as well as an in-die hole piercing capability where a slug 60 is formed and ejected from the hydroforming tool utilizing first and second passageways to function as a chute to catch and eject a slug of material formed during the in-die hole piercing process. To remove the hydroformed component out of the die assembly prior to the step of removing the removable wall section, as claimed, would render much of the Marando invention inoperable.

Furthermore, Marando explicitly teaches away from the claimed arrangement. At Col. 1, lines 16-29, Marando describes known metallic product forming processes that include separate stamping, punching or drilling processes. Marando notes that these manufacturing processes can be relatively time consuming and expensive because of the multiple pieces of equipment and processing steps required. The claimed process requires additional time and tooling to remove the removable wall section at some location other than the hydroforming die. Therefore, the Applicant respectfully submits that no reason exists why one skilled in the art would discard the method of providing in-

die hole piercing and slug removal as taught to Marando to perform the claimed process without the use of impermissible hindsight reasoning.

Lastly, the Applicant respectfully submits that Marando fails to teach or suggest the step of conforming a portion of the blank against a wall-thinning element positioned along the die surface to form a removable wall section in a portion of the blank wall. Specifically, Marando fails to associate the step of conforming a portion of the blank wall against the wall-thinning element with forming a removable wall section as recited by claim 4. On the contrary, Marando discloses expanding the blank and conforming the blank against the die wall and the punch to define the configuration of the hydroformed product with each of its final features except the removable wall section. Marando teaches advancing the punch into the finally formed hydroformed product to form the removable wall section. These processes differ greatly from one another in that Marando requires first forming the final outer shape of the product and subsequently axially moving the punch. The claimed process is not rendered obvious by Marando in view of the knowledge of one of ordinary skill in the art. As such, the Applicant respectfully requests withdrawal of the § 103 rejections to claims 4-6.

NEW CLAIMS

New claims 11-18 have been provided for substantive examination. The Applicant respectfully submits that none of the new claims are anticipated or obvious in view of any of the references cited by the Examiner, either solely or in combination with one another. As such, the Applicant respectfully requests the Examiner to pass these claims to allowance.

CONCLUSION

All of the grounds of rejection have been properly traversed, accommodated, or rendered moot. The Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding office action, and as such, the present application is in condition for allowance.

If it is believed that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1222. Prompt and favorable consideration of this amendment is respectfully requested.

Respectfully submitted,

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